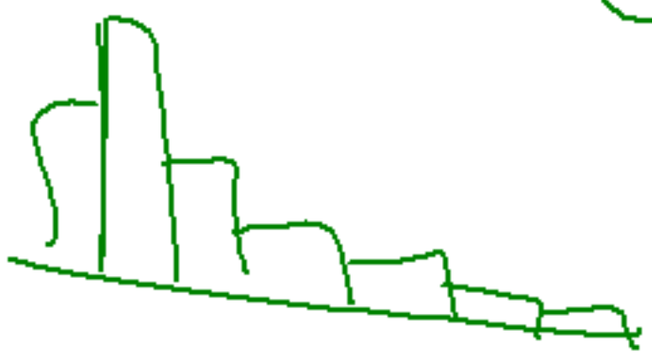
Median - not affected by outliers / skew

Mean (avg) - is affected by outliers/skew



- is pulled toward the outlier/skew.

$\bar{x}$ and s - use when data is roughly symmetric

dotplots
histograms

Med & 5# sum - skewed distributions or outliers

& boxplot

- can also use for symmetric

Sym

Rt. Skew

$\bar{x}$

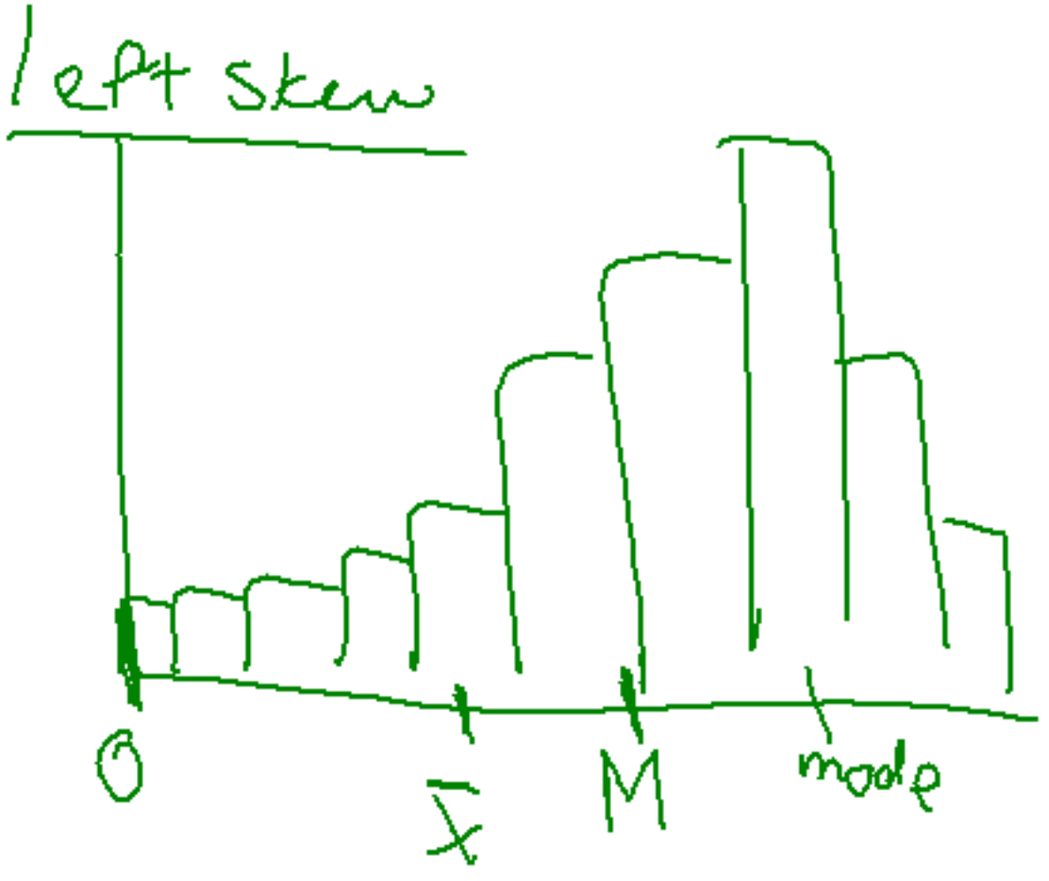
M

① roughly symm.

② rt. skew

③ lft. skew

left skew



a) $\bar{x} = 31$ $M = 57$ left skew Med.

b) $\bar{x} = 60$ $M = 10$ rt. skew Med.

c) $\bar{x} = 105$ $M = 100$ roughly symm. $\bar{x}$

OFFICIALLY

5# (min, Q1, Med, Q3, max)

* 1.5 x IQR test

① Find IQR (Q3 - Q1)

② 1.5 x IQR = A

③ Add this to Q3 Q3+A

Subtract this from Q1 Q1-A

④ Anything outside this range is outlier(s)

Data 1

$\bar{x} = 81.69$

$n = 36$

$s_x = 15.40$

min = 60

Q1 = 72

M = 78

Q3 = 94.5

max = 130

$IQR = 94.5 - 72 = 22.5$

$1.5(IQR) = 1.5(22.5) = 33.75$

$Q3 + 33.75 = 128.25$

$Q1 - 33.75 = 38.25$

Outliers

130

$\bar{x}$ and s

* anything outside of $\bar{x} \pm 2s$ is an outlier.

$\bar{x} = 73.59$

$s_x = 11.47$

min =

max =

$\bar{x} + 2s = 96.53$

$\bar{x} - 2s = 50.65$

outliers

99

41